HERST & ASSOCIATES, INC.®
Global Presence
Personal Attention

Mr. Dan Wall
US Environmental Protection Agency – Region VII
Superfund
901 North 5th Street
Kansas City, Kansas 66101

November 12, 2003

Dear Mr. Wall:

Proposed Supplemental Groundwater Sampling, West Lake Landfill Operable Unit 2

Pursuant to discussions during a meeting with the US Environmental Protection Agency (USEPA) and Missouri Department of Natural Resources (MDNR) on October 7, 2003, following are details regarding proposed supplemental groundwater sampling for the West Lake Landfill Operable Unit 2. As discussed, the purpose of the groundwater sampling is to provide current data to supplement groundwater quality data previously obtained during the Remedial Investigation (RI) phase of the project. The supplemental groundwater data will be used to verify the scope of and need for remedial actions at the site.

Two rounds of supplemental groundwater quality sampling are proposed. The first round is proposed to occur in approximately December 2003, to provide data coincident with expected seasonal low water levels. The second round is proposed to occur in approximately May / June of 2004, coincident with expected seasonal high water levels.

Considerable thought has been given regarding wells and analytes to be included in the supplemental groundwater sampling program. Recall that Operable Unit 2 at the West Lake Landfill is defined as all areas not otherwise included within Operable Unit 1 (see Figure 1). Operable Unit 2 includes an active solid waste landfill that is surrounded by its own set of detection monitoring wells (Figure 2) which have been and continue to be sampled on a semi-annual basis for volatile organic compounds (VOCs), metals, and conventional parameters as approved by the MDNR. Groundwater quality data in the area surrounding the active solid waste landfill is therefore current. Furthermore, sampling from these detection wells conducted in 1997 as part of the West Lake Landfill Operable Unit 2 RI demonstrated a lack of detectable semi-volatile organic compounds (SVOCs), no confirmed pesticides, and no detectable PCBs (see *Remedial Investigation Report, West Lake Landfill Operable Unit 2*, June 2000, page 48).

The proposed supplemental groundwater quality sampling program has been developed to build on the available data set for the active landfill detection monitoring wells by incorporating alluvial wells in the southwestern portion of the site, where previous RI characterization sampling results suggested the presence of groundwater compounds of potential concern. Figure 3 illustrates the proposed supplemental sampling well locations. The following wells are proposed for inclusion in the supplemental groundwater sampling program for Operable Unit 2, in addition to the 15 wells included in the detection monitoring program for the active solid waste landfill:

- PZ-302-AS
- PZ-302-AI
- MW-F2
- PZ-303-AS
- PZ-304-AS
- PZ-304-AI

The "-AS" suffix refers to shallow alluvial wells, and the "-AI" designation refers to intermediate depth alluvial wells. The "-AS" and "-AI" designations were described in detail in the *Remedial Investigation Report, West Lake Landfill Operable Unit 2.*

These wells are strategically located to provide data considered most pertinent for verifying current groundwater quality conditions as they apply to the need for and scope of remedial activities at the site. For example, these wells exhibited low level VOCs during the previous RI characterization sampling events. Therefore, analyses for VOCs are proposed for inclusion in the supplemental groundwater sampling program.

SVOCs were not detected in the bedrock groundwater units that are present adjacent to the active solid waste landfill during the RI characterization sampling events (*Remedial Investigation Report, West Lake Landfill Operable Unit 2*, pages 48 and 49). PZ-303-AS was the only alluvial piezometer to yield detectable SVOCs. Given that SVOCs were detected in at least one alluvial piezometer during the RI, analyses for SVOCs in the above-listed alluvial wells are proposed for inclusion in the supplemental groundwater sampling program.

No pesticides or PCBs were detected in alluvial wells by the primary laboratory during the Remedial Investigation sampling; therefore, pesticide and PCB analyses are not proposed.

No source of radioactivity in OU-2 has been identified or is suspected (see *Remedial Investigation Report, West Lake Landfill Operable Unit 2*, page 50), and, based on radionuclide data collected during the RI, groundwater quality appears to reflect natural radioactivity. Therefore, radionuclide analyses are not proposed.

Petroleum impacts to alluvial groundwater were identified in the southwestern portion of OU-2, possibly as a result of leaking underground storage tanks present at the asphalt plant within OU-2 (*Remedial Investigation Report, West Lake Operable Unit 2*). Therefore, analyses of total petroleum hydrocarbons (TPH) in the above-listed alluvial wells are proposed for inclusion in the supplemental groundwater sampling program.

Finally, the supplemental groundwater sampling program is proposed to include analyses of arsenic, iron, manganese, total dissolved solids (TDS), chloride, and fluoride to provide confirmatory data regarding the distribution of these parameters. These parameters, combined with VOCs, SVOCs, and TPH, encompass the list of groundwater compounds of potential concern presented in the *Remedial Investigation Report, West Lake Landfill Operable Unit 2*, Table 6-1. Coincidentally, with the exception of SVOCs and TPH, all of these parameters and parameter groups are included in the active solid waste landfill detection monitoring program. As described above, SVOCs were not detected in wells located near the active solid waste landfill during the previous RI characterization sampling events. There is no reason to suspect TPH impacts to groundwater near the active solid waste landfill.

Samples will be collected without field filtering, and will be analyzed to yield total results. Field turbidity measurements will be made to assist in interpreting the total results. Field temperature, conductivity, and pH measurements will also be made. Given that the proposed alluvial wells have not been sampled for a number of years, it is anticipated that at least five (5) well volumes will be purged prior to sample collection. During the OU-2 RI, purge water was disposed in the leachate pond, which was then discharged to a local water treatment facility. The leachate pond is no longer in service. Leachate from the active solid waste landfill is discharged from leachate risers to the local water treatment facility via a forcemain. It is proposed that OU-2 purge water generated during the supplemental groundwater sampling program will be added to leachate sump K-128 located near the active solid waste landfill for eventual transport to the local water treatment facility.

Analytical testing for the above-listed alluvial wells is proposed to be conducted by Severn Trent Laboratory (STL). STL provided the analytical testing for non-radionuclides during the OU-1 RI, and it is understood that STL will be utilized for analytical testing of samples to be collected during OU-1 supplemental alluvial groundwater sampling. Accordingly, STL's quality assurance / quality control measures have previously been considered appropriate for purposes of characterization activities at the site, and use of the same laboratory by both operable units should provide consistency in results for the alluvial data. The detection monitoring program for the active solid waste landfill utilizes a different laboratory (Heritage Environmental Services). It is proposed that the analyses for the detection monitoring wells continue to be performed by Heritage Environmental Services, which is currently under contract to the site and currently approved by the MDNR, to avoid disrupting the consistency in data for the active landfill.

One trip blank sample and one field blank sample, to be analyzed for VOCs, will be collected during each sampling event. One duplicate sample will be collected during each of the two proposed supplemental sampling events. One equipment blank sample will be collected during each sampling event. The duplicate sample and equipment blank sample will be analyzed for the analytical suite proposed for the alluvial wells.

In summary, the supplemental groundwater sampling program for the West Lake Landfill Operable Unit 2 area is proposed to include 21 wells (15 active landfill detection monitoring wells plus 6 alluvial wells) in areas that provide the most pertinent data for purposes of verifying the need for and scope of remedial activities. For the active solid waste landfill detection monitoring program wells (i.e., bedrock wells), proposed analytes include VOCs, arsenic, iron, manganese, TDS, chloride, and fluoride, which are part of the routine analyte list approved by the MDNR and which were identified as compounds of potential concern in this area of the site based on previous RI characterization sampling. Proposed analytes for alluvial wells include VOCs, SVOCs, TPH, TDS, arsenic, iron, manganese, chloride, and fluoride based on RI sampling results that suggest these as compounds of potential concern in this area of the site. Analyses are proposed to be conducted under Level III protocols (standard laboratory analytical procedures under SW-846 methodology). Because the RI sampling results were used as a basis for assessing risks, and the supplemental data are not intended for reassessing risks but rather are intended as generalized verification of existing groundwater conditions, there is no perceived need to request lower-than-standard analytical detection limits. Standard laboratory deliverable packages are assumed to be sufficient, without the need for development of CLP-equivalent deliverable packages.

We trust that this submittal meets your needs. Semi-annual sampling for the active solid waste landfill detection wells will occur in November. Upon receipt of EPA's and MDNR's approval, the supplemental groundwater sampling program described above will commence. Assuming that EPA and MDNR approval are received in a short time frame, supplemental sampling of the alluvial wells

can probably occur in December 2003, which is seasonally coincident with the active solid waste landfill detection sampling and therefore should provide a reliable snapshot of site-wide groundwater quality within OU-2. A concerted effort will be made to sample the active solid waste landfill detection monitoring wells and proposed alluvial wells listed above concurrently in the May / June time frame.

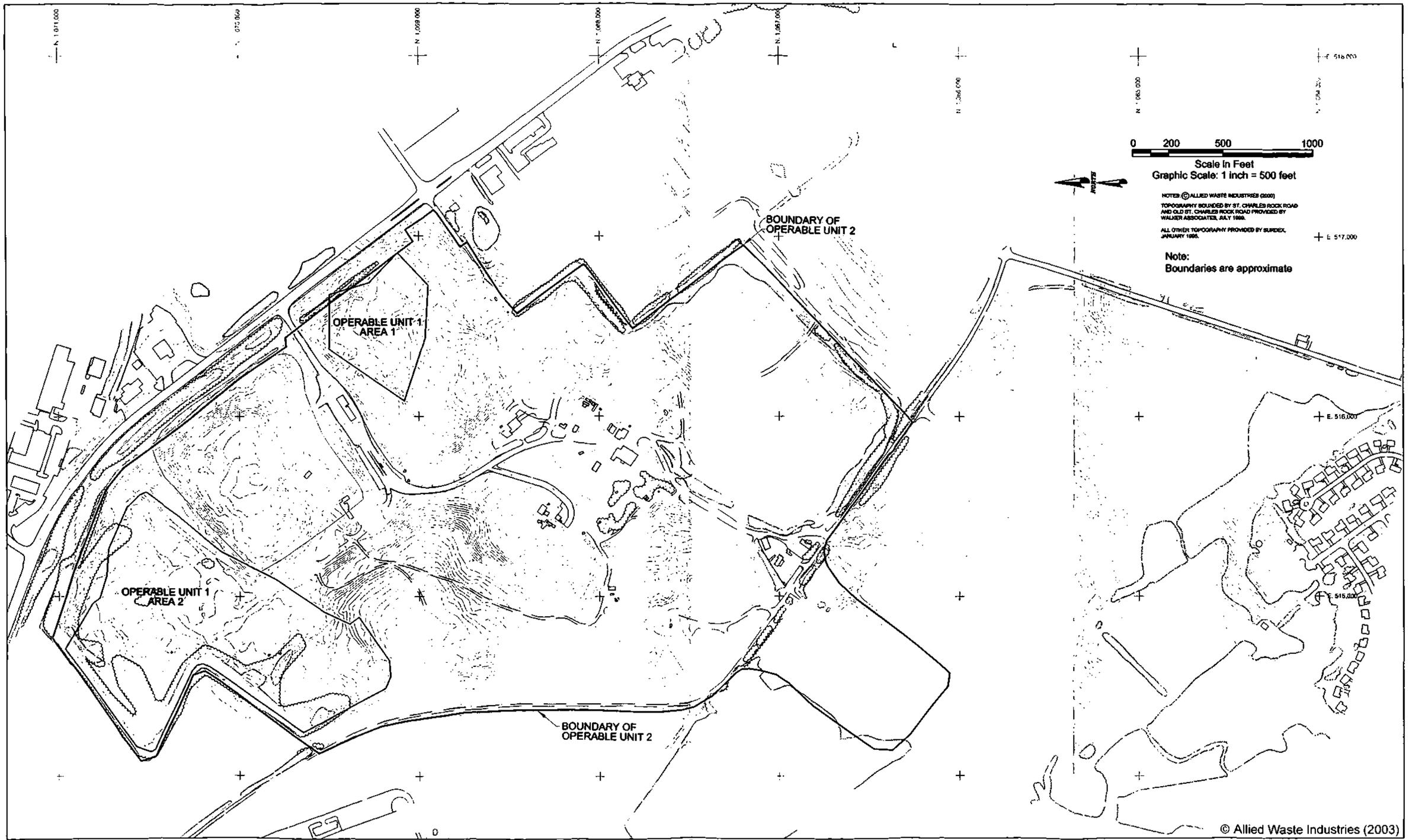
If you have any questions, please contact Mr. Doug Borro at 480-627-2800 or the undersigned.

Sincerely,

Herst & Associates, Inc.

COPY

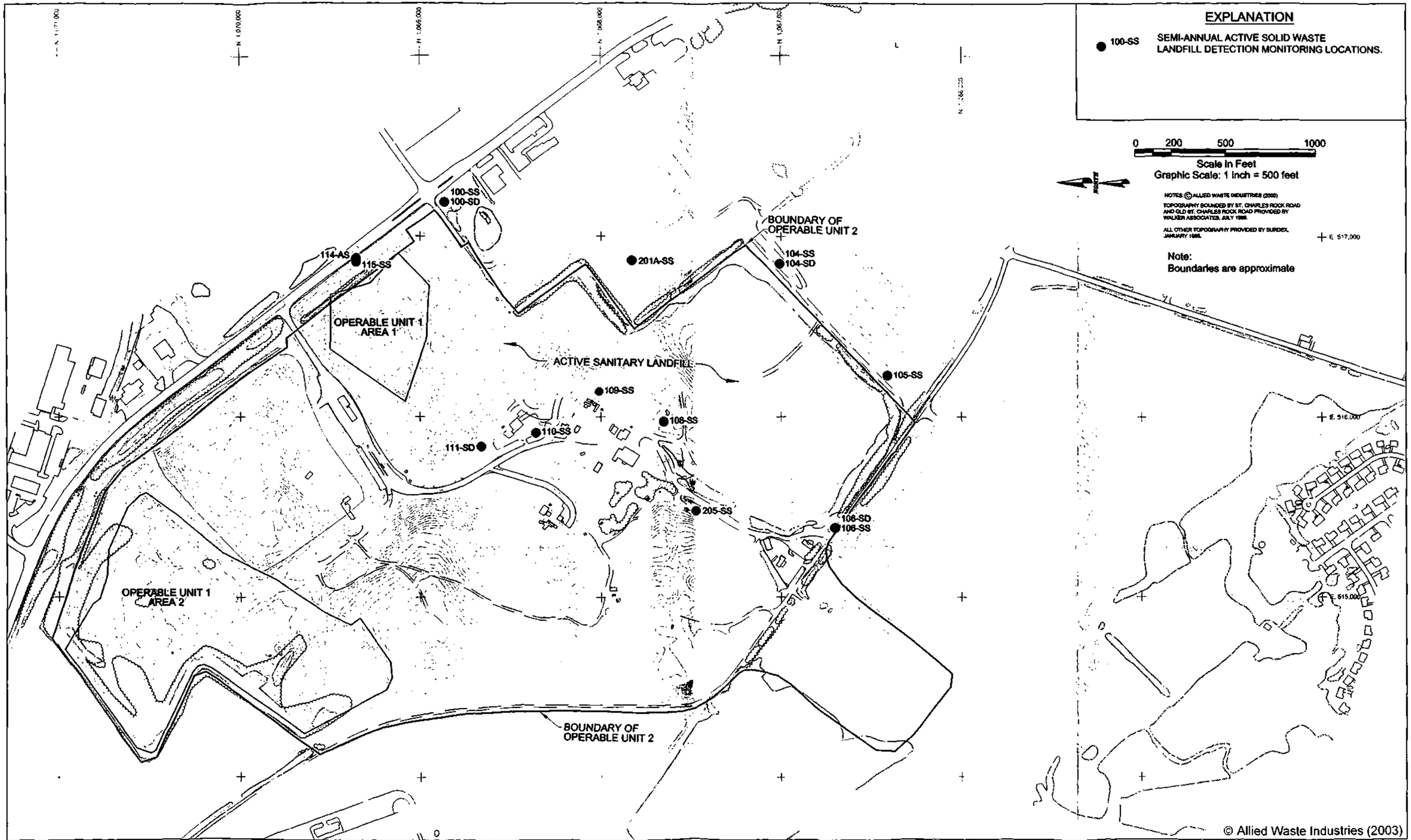
Ward Herst, PG
Managing Director



4630 South Highway 94
North Outer Road
St. Charles, Missouri 63304
Phone (636) 939-9111
Fax (636) 939-9757
HERST & ASSOCIATES, INC.®

Westlake Landfill
Bridgeton, Missouri

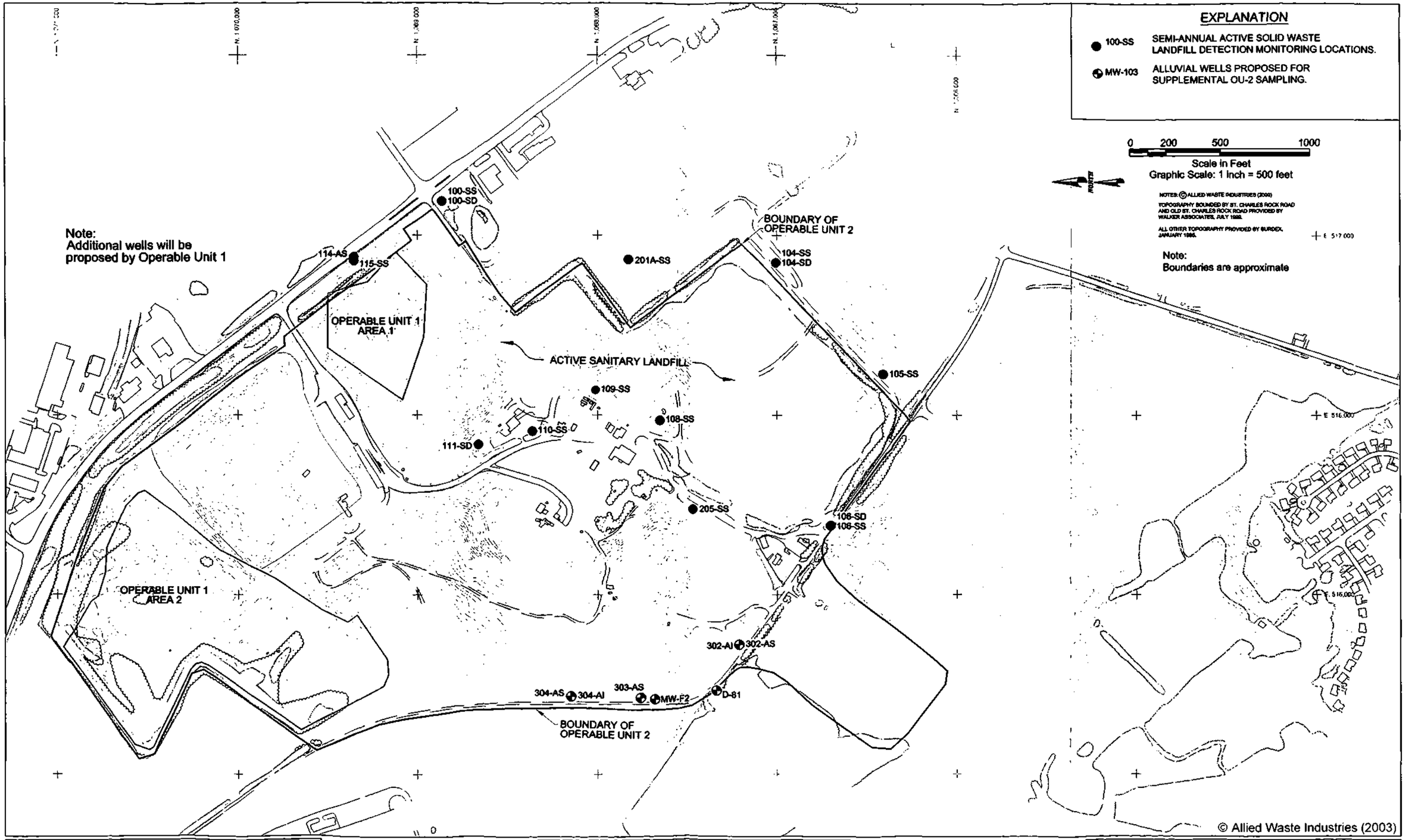
Figure 1
Operable Units
1 and 2



4630 South Highway 94
North Outer Road
St. Charles, Missouri 63304
Phone (636) 939-9111
Fax (636) 939-9757
HERST & ASSOCIATES, INC.®

Westlake Landfill
Bridgeton, Missouri

Figure 2
Active Landfill Detection Monitoring Wells



4630 South Highway 94
North Outer Road
St. Charles, Missouri 63304
Phone (636) 939-9111
Fax (636) 939-9757
HERST & ASSOCIATES, INC.®

Westlake Landfill
Bridgeton, Missouri

Figure 3
Wells Proposed for Supplemental OU-2 Sampling